CHBE 415 and 515 Separation Processes

Spring 2019
Monday and Wednesday, 2:00pm - 3:15pm, DCH 1075

Faculty

Dr. Marya Cokar, Room AEL-B226, marya.cokar@rice.edu

Office Hours

Dr. Marya Cokar Tuesday 1-3 pm AEL-B226

Course Description

This course covers general separation principles by equilibrium, diffusion and convective mass transport. Topics covered mass transport, distillation, solid-liquid and liquid-liquid extraction, crystallization, absorption, adsorption, stripping and membrane processes.

Course Prerequisites
CHBE 402 and CHBE 403
Co-requisites:
CHBE 404

Required Textbooks

"Transport Processes and Separation Process Principles" 5th Edition, Geankoplis, Hersel and Lepek.

Canvas

Please check the CHBE 415 and 515 Canvas Site regularly for announcements, lecture notes, resources, and homework assignments. You are responsible for reading all the Canvas announcements in a timely fashion. Sign in with your NetID and password to http://www.rice.edu/canvas/

Homework Policy

Homework will be due by 4PM to the dropbox (next to Abercrombie B228) one week from the date of assignment unless otherwise stated. Any assignment submitted later than the posted deadline will receive a penalty of 10% for each full day after the posted deadline. Homework will not be accepted after two full days beyond the posted deadline.

Honor Code Policy

The exams will require the honor pledge. All exams will be in-class.

Students are encouraged to discuss the homework sets with other students, the teaching assistants, the instructor, or anyone else. The assistance is limited to the discussion of the problem. Consulting another student's solution is prohibited and homework solutions may not be copied from any source.

Lecture Topics

- Mass Transfer
- Material Balance
- Boundary Layer Theory
- Extraction
- Filtration and Membrane Separation
- Adsorption
- Crystallization
- Absorption and Stripping
- Humidification Processes
- Distillation
- Liquid-Liquid Extraction
- Leaching
- Evaporation
- Drying

Special Needs

If you have a documented disability that may affect academic performance, you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) meet with me to discuss your accommodation needs during the first two weeks of class. All discussions will remain confidential.

Grading

Grading will be a combination of Homework and 4 Exams and if you are enrolled in the graduate class you will be required to complete an extra project. Grade distributions will be as follows for CHBE 415:

Homework – 30%
Exam 1 – 10%

Exam 2 – 20%
Exam 3 – 20%
Exam 4 – 20%

For the students enrolled in CHBE 515 the grade distribution will be as follows:

Homework – 10%
Exam 1 – 10%
Exam 2 – 20%
Exam 3 – 20%
Exam 4 – 20%
Project – 20%